DEPARTMENT OF THE ARMY
NEW ENGLAND DIVISION, CORPS OF ENGINEERS
424 TRAPELO ROAD
WALTHAM, MASSACHUSETTS 02254-9149

REPLY TO
ATTENTION OF

June 29, 1989

Operations Division
CENED-OD-S

JUL 10 89

Mr. Frank Ciavattieri
EPA
Waste Management Division (HANCAN2)
J.F. Kennedy Building
Boston, MA 02203

Dear Mr. Ciavattieri:

As you requested, we have prepared contaminant release estimates for the New Bedford Hot Spot giving consideration to the results of the pilot study. I have enclosed a table presenting the results and the parameters used to make the estimates.

A 2x safety factor has been included and the bottom line estimates have been rounded to one significant figure. We believe that this is appropriate for the following reasons:

A. The pilot study demonstrated that our procedure for estimating contaminant releases was conservative for the sediment dredged during the pilot study. However, extrapolating the results to the Hot Spot is a big step and should proceed cautiously.

B. The release estimates are based on resuspension at the dredge head and do not include other contaminant releases associated with work boats, moving anchors, etc., which contributed additional contaminant loads.

C. The Hot Spot sediment may contain pockets of oily material that may be freely released when disturbed by dredging.

D. Sediment resuspension estimates and laboratory elutriate concentrations are average values. Above average values will be frequently encountered.

Please give me a call if there are any questions or comments.

Sincerely,

Mark J. Otis
New Bedford Superfund
Project Office

Contaminant Release Estimates
Dredging Hot Spot Sediments

Parameter Description	Units	PCB	CD	CU	PB
1. Dredge production rate, in situ sediment volume	cu m/hr	27			
2. Dredge slurry flow rate	cu m/hr	576			
3. Effective dredge operating time	hr/day	4			
4. Daily dredge production rate	cu m/day	108			
5. Daily dredge slurry flow	cu m/day	2300			
6. In situ sediment concentration (water content 138%)	g/liter	552			
7. Dredge slurry total suspended solids (TSS) concentration	g/liter	40			
8. Solids pumping rate, dry weight	kg/day	92,160			
9. Sediment resuspension rate at dredge, TSS	g/sec	20			
10. Daily sediment resuspension rate at dredge, TSS	kg/day	288			
11. In situ sediment contaminant concentration	mg/kg	8,400	36	1,300	1,000
12. Elutriate contaminant concentration, whole water	mg/liter	3.04	0.0059	0.18	0.026
13. Elutriate dissolved contaminant concentration	mg/liter	0.58	0.0025	0.02	0.011
14. Elutriate total suspended solids (TSS) concentration	mg/liter	437	140	140	320
15. Elutriate contaminant concentration on sediment	mg/kg	5,627	23	1,101	47
16. Elutriate dissolved contaminant concentration/TSS	mg/kg	1330	17	115	34
17. Contaminant flux at dredge with TSS	kg/day	1.62	0.01	0.32	0.014
18. Contaminant flux at dredge, dissolved	kg/day	0.38	0.00	0.03	0.010
19. Total contaminant flux at dredge	kg/day	2.00	0.01	0.35	0.024
20. TSS escaping bridge (% fines =61, % escapes =52)	fraction	0.32	0.32	0.32	0.32
21. TSS escaping bridge	kg/day	92	92	92	92
22. Contaminant flux at bridge with TSS	kg/day	0.52	0.0021	0.093	0.0043
23. Contaminant flux at bridge, dissolved	kg/day	0.12	0.0016	0.011	0.0031
24. Total contaminant flux at bridge	kg/day	0.64	0.0037	0.10	0.0074

Contaminant flux at bridge with TSS (2X safety)	kg/day	1	0.0004	0.02	0.009
Contaminant flux at bridge, dissolved (2X safety)	kg/day	0.02	0.003	0.02	0.006
Total contaminant flux at bridge (2X safety)	kg/day	1.0	0.01	0.02	0.01

Contaminant flux at bridge with TSS (2X safety)	kg/cu m	0.01	0.00004	0.002	0.00008
Contaminant flux at bridge dissolved (2X safety)	kg/cu m	0.002	0.00003	0.0002	0.00006
Total contaminant flux at bridge (2X safety)	kg/cu m	0.01	0.00007	0.002	0.0001